

CLAIMS

1. A method for the repair of a cardiac valve (2) provided with an anterior (4) and posterior (6) leaflet, each being protruding from a corresponding leaflet base (8; 10) at the valve annulus (13), comprising the following steps: modifying said cardiac valve (2) by bringing at least one stabilizing element (14) into a selected position (26; 28) at each of the leaflet bases (8, 10); interconnecting said leaflet bases by extending said stabilizing element (14) across the cardiac valve (2) and; determining the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases by means of said stabilizing element (14).
2. A method for the repair of a cardiac valve (2) provided with an anterior (4) and posterior (6) leaflet, each being protruding from a corresponding leaflet base (8; 10) at the valve annulus (13), comprising: entering a steerable applicator (32) endovascularly into the left atrium; modifying said cardiac valve (2) by using said steerable applicator (32) for performing the following steps: bringing at least one stabilizing element (14) into a selected position (26; 28) at each of the leaflet bases (8, 10); interconnecting said leaflet bases by extending said stabilizing element (14) across the cardiac valve (2) and; determining the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases by means of said stabilizing element (14).
3. A method for the repair of a cardiac valve (2) provided with an anterior (4) and posterior (6) leaflet, each being protruding from a corresponding leaflet base (8; 10) at the valve annulus (13), comprising the following steps: modifying said cardiac valve (2) by bringing a first end (22) of at least one stabilizing element (14) into a first selected position (26) of the valve annulus (13) and a second end (24) of said at least one stabilizing element (14) into a second selected position (28) of the valve annulus (13); interconnecting said leaflet bases (8; 10) by extending said stabilizing element (14) across the cardiac valve (2) and; determin-

ing the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases by means of said stabilizing element (14).

4. A method for the repair of a cardiac valve (2) provided with an anterior (4) and posterior (6) leaflet, each being protruding from a corresponding leaflet base (8; 10) at the valve annulus (13), comprising: entering a steerable applicator (32) endovascularly into the left atrium; modifying said cardiac valve (2) by using said steerable applicator (32) for performing the following steps: bringing a first end (22) of at least one stabilizing element (14) into a first selected position (26) of the valve annulus (13) and a second end (24) of said at least one stabilizing element (14) into a second selected position (28) of the valve annulus (13); interconnecting said leaflet bases (8; 10) by extending said stabilizing element (14) across the cardiac valve (2) and; determining the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases by means of said stabilizing element (14).
5. A method according to one of claims 1-4, comprising the step of: adjusting the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases by varying the length of said stabilizing element (14).
6. A method according to one of claims 1-5, comprising the step of: attaching the stabilizing element (14) to the atrial side of each leaflet base (8; 10), said stabilizing element (14) serving as a support for said leaflets (4, 6).
7. A method according to claim 6, comprising the steps of: tightening the stabilizing element (14), in case of a prolaps, by means of shortening its length between its selected positions (26; 28) at said leaflet bases (8; 10) close to the apposition line (O) of the leaflets (4, 6) (the orifice plane of the valve), thereby extending said stabilizing element 14 straightly between said selected positions (26; 28); locating even a central part of said stabilizing element 14 between said leaflet

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bases (8; 10) close to the apposition line (O) of the leaflets (4, 6) and; at the same time positioning the leaflet bases (8; 10) mutually closer and attaining coaptation of the leaflets (4, 6).

5 8. A method according to one of claims 2-7, comprising the steps of: encasing said steerable applicator (32) (catheter) in an inserting device (guidance sheath) for penetrating the human skin and achieving a venous access port; extending the steerable applicator (32) from a maneuvering device at a proximal end outside said access port, through the femoral vein, the inferior vena cava and the right atrium to penetrate the intra-atrial septum to the left atrium and; arranging the steerable applicator (32) (catheter) with a manipulative distal end (31) in one of said selected positions (26; 28).

10 9. A method according to claim 8, which is comprised of assessing said selected position (28) to the posterior mitral leaflet base (10).

15 10. A method according to claim 8, which is comprised of assessing said selected position (26) to the anterior mitral leaflet base (8).

20 11. A ^{device/apparatus} means for the repair of a cardiac valve (2) comprising an anterior (4) and posterior (6) leaflet, each being protruding from a corresponding leaflet base (8; 10) at the valve annulus (13), said means being arranged for modifying said cardiac valve (2), in which the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases is determined by means of at least one stabilizing element (14), which has been brought into a selected position (26; 28) at each of the leaflet bases (8, 10), said leaflet bases being interconnected by means of said stabilizing element (14) which is extended across the cardiac valve (2).

25 12. A means for the repair of a cardiac valve (2) comprising an anterior (4) and posterior (6) leaflet, each being protruding from a corresponding leaflet base (8;

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10) at the valve annulus (13), said means being arranged for modifying said cardiac valve (2), in which the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases is determined by means of at least one stabilizing element (14), which by means of a steerable applicator (32) for endovascular entrance into the left atrium, has been brought into a selected position (26; 28) at each of the leaflet bases (8, 10), said leaflet bases being interconnected by means of said stabilizing element (14) which is extended across the cardiac valve (2).

13. A means for the repair of a cardiac valve (2) comprising an anterior (4) and posterior (6) leaflet, each being protruding from a corresponding leaflet base (8; 10) at the valve annulus (13), said means being arranged for modifying said cardiac valve (2), in which the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases is determined by means of at least one stabilizing element (14), which is provided with a first (22) and a second (24) end, which has been brought into a first (26) and a second (28) selected position of the valve annulus (13), said leaflet bases (8; 10) thereby being interconnected by means of said stabilizing element (14), which is arranged to be extended across the cardiac valve (2).

14. A means for the repair of a cardiac valve (2) comprising an anterior (4) and posterior (6) leaflet, each being protruding from a corresponding leaflet base (8; 10) at the valve annulus (13), said means being arranged for modifying said cardiac valve (2), in which the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases is determined by means of at least one stabilizing element (14), which is provided with a first (22) and a second (24) end, which, by means of a steerable applicator (32) for endovascular entrance into the left atrium, has been brought into a first (26) and a second (28) selected position of the valve annulus (13), said leaflet bases (8; 10) thereby being interconnected by means of said stabilizing element (14), which is arranged to be extended across the cardiac valve (2).

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15. A means according to one of claims 11-14, wherein the distance (D1, D2) between the anterior (8) and posterior (10) leaflet bases is adjustable by means of varying the length of said stabilizing element (14).

16. A means according to claim 15, wherein the stabilizing element (14) is attached to the atrial side of each leaflet base (8; 10) and serves as a support for said leaflets (4, 6).

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17. A means according to claim 16, wherein the stabilizing element (14), in case of a prolaps, by means of shortening its length, is tightened between its selected positions (26; 28) at said leaflet bases (8; 10) close to the apposition line (O) of the leaflets (4, 6) (the orifice plane of the valve), said stabilizing element 14 thereby being straightly extended between said selected positions (26; 28), whereby even a central part of said stabilizing element 14 between said leaflet bases (8; 10) is located close to the apposition line (O) of the leaflets (4, 6), at the same time as the leaflet bases (8; 10) are mutually closer positioned and coaptation of the leaflets (4, 6) attained.

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18. A means according to one of claims 11-17, wherein the stabilizing element (14) is comprised of a rod or wire.

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19. A means according to one of claims 11-17, wherein the stabilizing element (14) is comprised of a number of rods or wires.

20. A means according to one of claims 11-17, wherein the stabilizing element (14) is a structure comprising a number of rods or wires.

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21. A means according to one of claims 11 -17, wherein the stabilizing element (14) is comprised of a strip or band.

22. A means according to one of claims 11 -17, wherein the stabilizing element (14) is comprised of a number of strips or bands.

5 23. A means according to claim 21 or 22, wherein each strip or band is net-formed.

24. A means according to one of claims 20-22, wherein an intermediate section of each structure, strip or band is shaped in the form of a ring.

10 25. A means according to one of claims 20-22, wherein an intermediate section of each structure, strip or band is shaped in the form of a circular disc.

26. A means according to one of claims 11-25, wherein said steerable applicator (32) (catheter) is encased in an inserting device (guidance sheath) for penetrating the human skin to achieve a venous access port and extended, from a maneuvering device at a proximal end outside said access port, through the femoral vein, the inferior vena cava and the right atrium to penetrate the intra-atrial septum to the left atrium, the steerable applicator (32) (catheter) being arrangable with a manipulative distal end (31) in one of said selected positions (26; 28).

20 27. A means according to claim 26, wherein the selected position (28) is assessed to the posterior mitral leaflet base (10).

25 28. A means according to claim 26, wherein the selected position (26) is assessed to the anterior mitral leaflet base (8).

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